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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/647,965	05/24/2001	John Hiscott	A33606-PCTUS	7406

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EXAMINER	
MCKELVEY, TERRY ALAN	
ART UNIT	**PAPER NUMBER**
1636	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/647,965	HISCOTT ET AL.	
	Examiner	Art Unit	
	Terry A. McKelvey	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2003 and 23 April 2004*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-21,26,32 and 34-39* is/are pending in the application.

4a) Of the above claim(s) *3,8-16 and 35-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-7,26,32,34 and 39* is/are rejected.

7)☒ Claim(s) *4 and 17-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

All objections and rejections not repeated in the instant Action have been withdrawn due to applicant's response to the previous Action.

Election/Restrictions

Claims 3, 8-16, and 35-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/2/02.

This application contains claims 3, 8-16, and 35-38 drawn to an invention nonelected with traverse in the reply filed on 12/2/02. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Priority

The applicant presents arguments traversing the denial of priority in the Office Action mailed 7/2/03. These arguments

are not persuasive, but the issue is moot because of the amendment to the claims, filed 4/23/04, canceling or amending the subject matter which lacked the priority.

Claim Rejections - 35 USC § 112

Claims 26, 32, and 34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention. This rejection is maintained for reasons of record set forth in the paper mailed 7/2/03. Applicants' arguments filed 12/23/03 have been fully considered but they are not deemed to be persuasive.

The claim is drawn to a pharmaceutical composition comprising an effective amount of a modified IRF protein (and a pharmaceutical carrier). The only disclosed use for these compositions is for treatment of a large number of diseases including influenza infection, herpes infection, hepatitis infection, HIV infection, and cancer (which reads on over 100 different diseases).

The nature of the invention is very complex because it is a composition that is to be used to treat illness. The specification teaches that the composition can be used to treat

diseases including influenza infection, herpes infection, hepatitis infection, HIV infection, and cancer. The list of possible diseases to treat is **very large** and concerns treating very complex diseases such as cancer and specific viral diseases, including HIV. These are all very complex diseases, that although some other types of treatments exist for these diseases, no type of treatment exists for these diseases based upon a similar broad class of compound, because the instant claims are drawn to treatments using whole, altered transcription regulatory factors. For example, although there exists some treatments for HIV infection, there are no general or specific treatments based upon administration of a protein that is a transcription factor, let alone a transcription factor structurally related to IRF proteins.

The state of the prior art is that there is no enabled teaching in the prior art of a transcription factor protein being administered to a human patient in order to treat any disease such as those claimed.

Neither the art nor the specification teaches a working example of administration of the claimed pharmaceutical composition to a patient that successfully treats any disease as claimed.

There is no guidance in the prior art and only slight, prophetic generic guidance in the specification concerning how to make and administer the claimed composition to treat disease. The specification merely teaches to use a pharmaceutically acceptable carrier (mentioning some of those known in the prior art) with the protein and administer the composition using one of the common methods and dosages taught in the art as being a possible administration method to try. The specification does not disclose, beyond a very generic description, the intended patients (treatment of a large number of very different diseases is envisioned). For example, the specification fails to teach how to specifically make and use the claimed composition for the treatment of cancer versus HIV infection, two very different diseases that presumably would require very different pharmaceutical formulations and administration methods. This overall guidance is very slight because it can be considered to be merely speculative because the effective use of a protein having in vitro biological activity as a drug to treat a disease is extremely unpredictable as taught by Caldwell.

Caldwell is cited to show the unpredictability in the art concerning how to make and use a drug. Caldwell teaches that drug action is the result of interaction with target sites, for both desired and undesired actions, modulated by the transfer

processes, the pharmacokinetic variables of absorption, distribution, metabolism and elimination, by which the drug enters and leaves the body. This reference teaches that there is far more inter- and intraspecies variation, in animals and humans, in the factors influencing the nature and extent of internal exposure, than in the sensitivity of drug targets and this pharmacokinetic variability is the cause of major problems in drug development. Caldwell also teaches that failure to take these pharmacokinetic defects, including poor absorption, very short or very long half-life, enzyme induction and high first pass effect, into consideration can cause expensive delay and/or failure during development. This reference thus shows that drug development is very unpredictable, requiring the consideration of many unpredictable factors in determining how to make and use the drug. These very necessary, but unpredictable factors are not taught in either the art or the specification for the specific administration of the claimed composition in vivo for disease treatment, the only intended use for the claimed pharmaceutical compositions.

In view of the large quantity of experimentation necessary to determine the unpredictable parameters necessary for the pharmaceutical composition to function successfully in vivo, the lack of significant direction or guidance presented, the absence

of working examples, the breadth of the claims which includes the treatment of very many, very different diseases, and the unpredictable and undeveloped state of the art with respect to formulating an IRF protein into a functional drug that can treat a condition in vivo, let alone a large number of very different conditions, it would require undue experimentation for one skilled in the art to practice the claimed invention.

Amending the claims to recite "A composition comprising ... and a carrier." would be remedial in overcoming the instant rejection.

Response to Arguments

The applicant amended the claims to remove the "for treatment ..." limitations, and thus implies that the amendment should overcome the instant rejection. However, the claims are still drawn to pharmaceutical compositions and thus still subject to the instant rejection. The applicant presented no further arguments concerning the instant rejection.

Claim Rejections - 35 USC § 102

Claims 5 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoneyama et al (Applicant reference CY). This is a new rejection necessitated by the applicant's

amendment of the claims filed 4/23/04. The applicant's arguments filed 12/23/03 as they apply to the instant rejection have been fully considered but they are not deemed to be persuasive.

Yoneyama et al teach isolated IRF-3 protein which is phosphorylated following NDV infection (page 1089, columns 1-2), which causes an increase of interferon expression. This reads on the claimed invention because virus infection inherently results in phosphorylation of IRF-3 in the serine or threonine phosphoacceptor site in the carboxy terminus, which causes increased cytokine gene activation by the protein (the inherency is shown by the instant reference and/or the instant application). Thus, the isolated phosphorylated IRF-3 protein (present in the gels or immunoprecipitated) taught by the reference anticipates the claimed invention.

Response to Arguments

The applicant essentially argues that the mutant IRF-3 taught by the reference are inactive and that the reference does not describe a role for the modification of the actual serine residues (or threonine residues) that are involved in activation of IFN expression. This argument is not persuasive for the instant rejection because Yoneyama et al teach phosphorylated

IRF-3, which inherently meets the claim limitations for the reasons described above.

Claims 5-7 and 39 are rejected under 35 U.S.C. 102(a) as being anticipated by Lin et al (Applicant reference BS). This is a new rejection (but essentially equivalent to the previous rejection under 35 USC 102(b) over the same reference) necessitated by the applicant's amendment filed 4/23/04 which changed the claim limitations, eliminating a claim limitation that caused a later priority date, resulting in a new, earlier priority date for the claims. Applicants' arguments filed 12/23/03 as they apply to the instant rejection have been fully considered but they are not deemed to be persuasive.

Lin et al teach IRF-3 modified by phosphorylation and IRF-3 modified by asp modification of the serine or threonine phosphoacceptor sites including other than Ser-385 or Ser-386 in the C-terminus, generating a constitutively, more active IRF-3 (abstract; page 2988). The IRF-3 taught by the reference reads on isolated IRF-3 because IRF-3 is taught in an immunoprecipitated form (which is isolated from most other proteins (page 2990, column 2)) and the IRF-3's are also taught in specific bands in immunoblots, which are isolated from most other proteins normally present (throughout the reference).

Response to Arguments

The applicant argues that the Lin et al reference was published on May 5, 1998, which is less than 12 months before the international filing date of April 7, 1999. This argument is not persuasive in overcoming the instant rejection because it is a rejection under 35 USC 102(a) which is to a reference by "another" less than 12 months prior to the instant application priority date (the foreign priority date reference lacks written description and enablement of the invention as broadly claimed in claims 5-7 and 39 and thus priority to that application is denied).

Allowable Subject Matter

Claims 4 and 17-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS**

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Certain papers related to this application may be submitted to Art Unit 1636 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone number for the Group is 703-872-9306. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. NO

DUPLICATE COPIES SHOULD BE SUBMITTED so as to avoid the processing of duplicate papers in the Office.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the

scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Any inquiry concerning rejections or objections in this communication or earlier communications from the examiner should be directed to Terry A. McKelvey whose telephone number is (571) 272-0775. The examiner can normally be reached on Monday through Friday, except for Wednesdays, from about 7:30 AM to about 6:00 PM. A phone message left at this number will be responded to as soon as possible (i.e., shortly after the examiner returns to his office).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Remy Yucel can be reached at (571) 272-0781.

Terry A. McKelvey, Ph.D.
Primary Examiner
Art Unit 1636

July 11, 2004